AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1-14 (Canceled).

15. (New) A method for bidirectional single-wire data transmission of data information between an electronic control unit and at least one peripheral unit, comprising:

applying a predefined constant voltage to a driver device of the electronic control unit to produce voltage-coded information;

transmitting the voltage-coded information from the driver device of the electronic control unit to a driver device of the peripheral unit via a single-wire line;

triggering and powering at least one of: i) driver logic of the driver device, and ii) a communication logic of the peripheral unit through a current flow generated by the applied voltage, current-coding information occurring on the peripheral unit due to the triggering thereof; and

uploading the current-coded information from the driver device of the peripheral unit to the driver device of the electronic control unit via the single-wire line during the triggering of the peripheral unit.

16. (New) The method as recited in claim 15, wherein the voltage-coded information is implemented as a binary signal and the current-coded upload from the peripheral unit to the electronic control unit is implemented as an analog signal.

17. (New) The method as recited in claim 15, wherein the voltage-coded and the current-coded upload from the peripheral unit to the electronic control unit are implemented as binary signals.

18. (New) A method for bidirectional single-wire data transmission of data information between an electronic control unit and at least one peripheral unit, comprising:

applying a predefined constant current to a driver device of the electronic control unit to produce current-coded information;

transmitting the current-coded information from the driver device of the electronic control unit to a driver device of the peripheral unit via a single-wire line;

triggering and powering at least a driver logic of the driver device and a communication logic of the peripheral unit by a current flow generated by the applied current;

voltage-coding information occurring on the peripheral unit due to the triggering thereof; and

uploading the voltage-coded information from the driver device of the peripheral unit to the driver device of the electronic control unit via the single-wire line during the triggering of the peripheral unit.

19. (New) The method as recited in claim 18, wherein the current-coded information is implemented as a binary signal and the voltage-coded upload from the peripheral unit to the electronic control unit is implemented as an analog signal.

20. (New) The method as recited in claim 18, wherein the current-coded triggering of the peripheral unit and the voltage-coded upload from the peripheral unit to the electronic control unit are implemented as binary signals.

21. (New) The method as recited in claim 18, wherein the information to be uploaded from the peripheral unit to the electronic control unit is implemented as a diagnostic signal for diagnosis of the peripheral unit.

22. (New) The method as recited claim 18, wherein the information to be uploaded from the peripheral unit to the electronic control unit is implemented as an information signal for further control of the peripheral unit.

23. (New) The method as recited in claim 18, wherein the information to be uploaded is coded in such a way that a duration until a signal edge change of voltage represents a characteristic variable of the information.

24. (New) The method as recited in claim 18, wherein the information to be uploaded is coded in such a way that a state or signal edge change within a time slot represents a characteristic variable of the information and is interpreted as a bit.

25. (New) A device for bidirectional single-wire transmission of data information between an electronic control unit and at least one peripheral unit comprising:

a first circuit arrangement configured to produce and transmit voltage-coded information from a driver device of the electronic control unit to a driver device of the peripheral unit via a single-wire line and to trigger and power, simultaneously thereto, at least driver logic of the driver device and communication logic of the peripheral unit; and

a second circuit arrangement configured to upload current-coded information of the driver device of the peripheral unit to the driver device of the electronic control unit via the single-wire line during the triggering of the peripheral unit.

26. (New) A device for bidirectional single-wire transmission of data information between an electronic control unit and at least one peripheral unit, comprising:

a first circuit arrangement configured to produce and transmit current-coded information from a driver device of the electronic control unit to a driver device of the peripheral unit via a single-wire line and to trigger and power, simultaneously thereto, at least driver logic of the driver device and communication logic of the peripheral unit; and

a second circuit arrangement configured to upload voltage-coded information of the driver device of the peripheral unit to the driver device of the electronic control unit via the single-wire line during the triggering of the peripheral unit.

27. (New) The device as recited in claim 25, wherein the electronic control unit is an engine control unit.

28. (New) The device as recited in claim 25, wherein the peripheral unit is one of an ignition coil or a fuel injector.

29. (New) The device as recited in claim 26, wherein the peripheral unit is one of an ignition coil or a fuel injector.

30. (New) The device as recited in claim 27, wherein the peripheral unit is one of an ignition coil or a fuel injector.

31. (New) The device as recited in claim 26, wherein the electronic control unit is an engine control unit.

32. (New) The method as recited in claim 15, wherein the information to be uploaded from the peripheral unit to the electronic control unit is implemented as a diagnostic signal for diagnosis of the peripheral unit.

33. (New) The method as recited claim 15, wherein the information to be uploaded from the peripheral unit to the electronic control unit is implemented as an information signal for further control of the peripheral unit.

34. (New) The method as recited in claim 15, wherein the information to be uploaded is coded in such a way that a duration until a signal edge change of voltage represents a characteristic variable of the information.

35. (New) The method as recited in claim 15, wherein the information to be uploaded is coded in such a way that a state or signal edge change within a time slot represents a characteristic variable of the information and is interpreted as a bit.